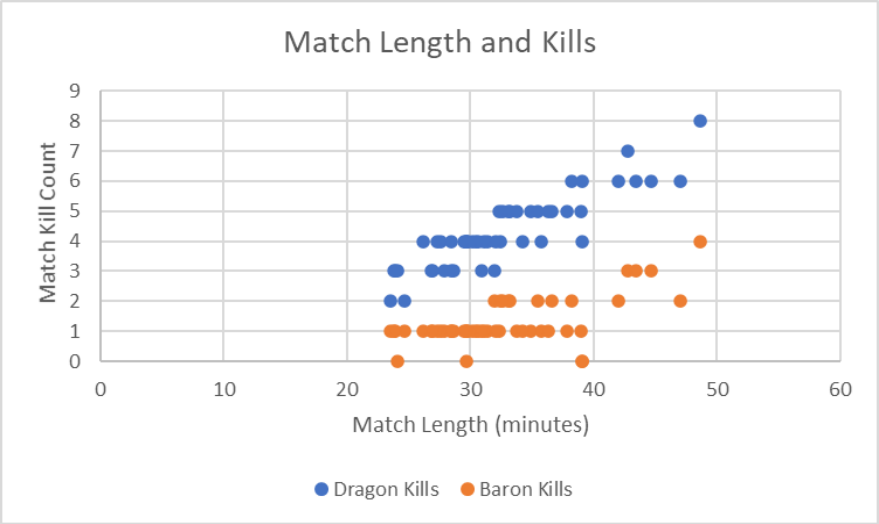
Question 1

In our first investigative question, we sought to explore what factors influence the length of a match, if any, and which factors did so the most. What we found was that both dragon kills and baron kills were correlated with the length of a match, dragon kills more so than baron kills. Typically, the more baron/dragon kills there were, the longer the match went on for. This was interesting, as we initially suspected that the number of deaths in a match might prolong how long the match went on for. When we performed queries to investigate this, we discovered that there was no clear correlation between the length of a match and total number of kills/deaths in that match. This was somewhat surprising, and prompted us to look at specific kills. We found that high tdragk and tbaronk values had high match lengths, and all high match lengths had high tdragk and tbaronk values - the same generally held for lower and moderate values. We did this across several queries, (4-7 in our demos file). To confirm our findings, we decided to graph the kill counts and match lengths to get a more broad image of the dataset. This figure is shown below.



After looking at the figure, it became more clear that dragon kills might be more influential than baron kills, as the data points are more clustered together and there are fewer outliers, whereas baron kills has a few outliers and is not as tightly clustered. We also looked at how the time of key events (like first dragon/baron slain, first blood, first tower destroyed) impacted the length of the match in queries 8-9 in our demos file, but could not find apparent patterns or correlations. We then concluded that dragon/baron kills influenced length most.

Question 2

Team Performance

When investigating if any team performance statistics correlated with the win rate, we investigated several statistics but ultimately were not able to find any clear correlation or patterns in the data. We began by looking at the total winRate for matches and the corresponding number of kills, dragkills, and baronkills. When we did not find any patterns, we examined the red and blue winRates separately, and high and low winRates separately (queries 2-5), as well as the average values of the team performance variables (queries 6-9) and found that they were about the same across win rates and colours. While we did not find tkills, tdeaths, tdragk, tbaronk or any other statistics to be informative, we noticed that there was always some champID more common in specific groups (ex. almost 60% of champIDs for high wRRed were 26). We also noticed there were almost double the number of matches with high wRBlue than wRRed.

Individual Performance

Results of queries 10 - 18:

% of winning teams with a player that had the most kills in a match	% of winning teams with a player that had the most assists in a match	% of winning teams with a player that had the least deaths in a match	% of winning teams with a player that got first blood (the first kill) in a match
0.96	0.96	0.92	0.6

In regards to the impact of individual player performances, it was determined that in any given match, if a team possessed a player who either had the most kills, most assists or the least deaths, then there was a greater than 90% chance that team was victorious. On the other hand, a team having a player who achieved first blood (got the first kill) was less of an indicator that the team was the victor. Furthermore, there was a 100% association between the winning team and the MVP (queries 19 - 20).

Due to the MVP's direct correlation with the winning team, we further looked into the match statistics of the MVP, seeking to ascertain what exactly they did in a match that contributed so much to winning.

Results of queries 21 - 24:

% of MVP's that had the most kills in a match	% of MVP's that had the most assists in a match	% of MVP's that had the least deaths in a match	% of MVP's that got first blood (the first kill) in a match
0.36	0.08	0.16	0.18

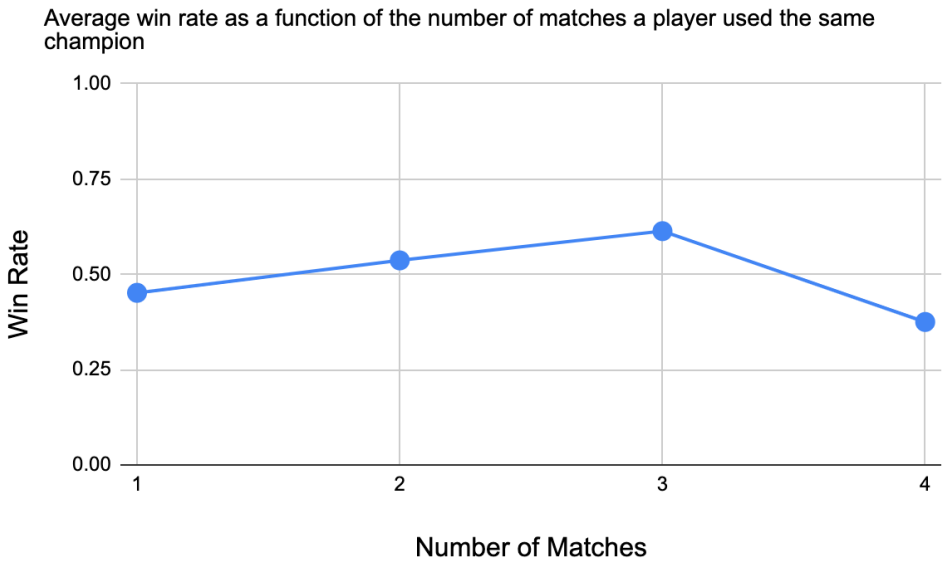
However, the way in which the MVP was determined was much less obvious than assumed. As seen in the table above, MVP's rarely, if ever, lead the matches in kills, assists or least deaths, or achieved first blood.

In conclusion, based on the information that we were able to draw from our queries, we deduce that the win rate correlates most with strong individual performances.

Question 3

Queries 25 - 32

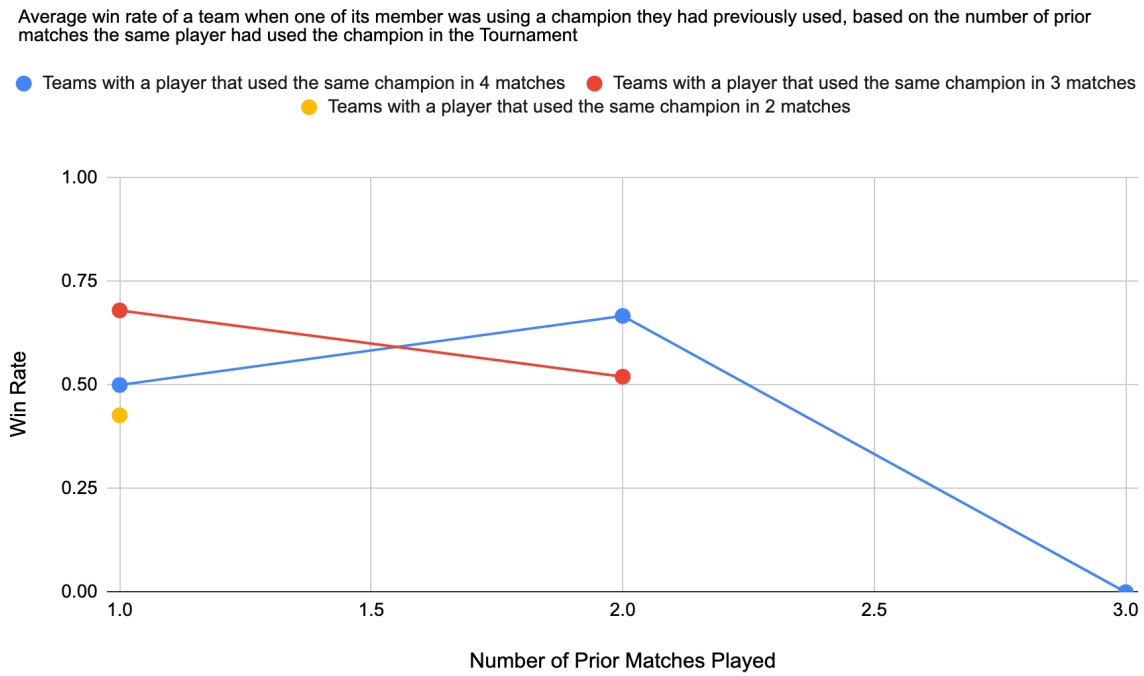
Throughout the tournament, the number of matches in which a player used the same champion ranged from 1 to 4. By analyzing the match statistics of players that used a champion 1, 2 ,3 and 4 times respectively, it was determined that between 1 and 3 matches played, there was a linear relationship between the number of matches played and win rate. Each additional match resulted in a ≈ 8% increase in win rate. However, an increase from 3 to 4 matches played resulted in a ≈ 24% decrease in win rate.



Queries 33 - 53

In the cases where more than 1 match is played, the primary concern with the above results is that there is no indication of when the wins and losses occurred relative to the number of matches that had already been played by the player with the same champion. Thus, we sought to further determine whether a team having access to prior tournament matches of an upcoming opponent would give

them a potential advantage, should one of the opposing players choose a champion that they (the player) had previously played with.



We observed a significant drop in win rate occurred after 3 matches had been played in the case of using a champion for 4 matches. Additionally, a similar, but much less steep decline, also occurred in the case of using a champion for 3 matches, after 2 matches had been played. However, the behaviour of the win rate in these 2 cases contradicted one another between 1 and 2 prior matches played, with the win rate of one increasing, and the other decreasing. Furthermore, the majority of win rates in the graph are greater than or equal to 0.50. If the player's actions were indeed disadvantageous, we would expect them to lower win rates well below 0.50 in a much more consistent and agreeable manner. Thus, we conclude that repetitive use of a champion by a player is not detrimental to a team's performance.